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MONTANA Forest Products Marketing Bulletin

Department of State Lands, Division of Forestry
2705 Spurgin Road Missoula, Montana 59801
Ph:(406)728-4300

GARY G. BROWN, STATE FORESTER

PAUL MOORE, EDITOR

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This bulletin is mailed primarily to individuals engaged in the Forest Products Industry in Montana. In addition, it is mailed to county agents, lumber brokers, wholesalers, dealers of sawmill and logging equipment, interested technicians, educators and Montana Tree Farmers, as well as the Departments of Forestry in all states.

The purpose of this newsletter is to communicate information regarding the properties and uses of wood products, promote efficiency in the utilization of wood from the stump to the end product, and to serve as a communication link between the members of the forest products industry.

All persons receiving this newsletter are asked to examine their mailing address and advise this office of any corrections needed for proper mailing.

QUARTERLY ECONOMIC REPORT

Missoula, May 1, 1984. The Bureau of Business and Economic Research today reported that more lumber and plywood was produced during the first three months of 1984 than any single quarter in 1983. High production levels are not expected to continue since the prices for lumber and plywood have dropped.

In addition to high production, Bureau researchers reported healthy employment and wage levels. An average of 4,618 employees worked each month in the first quarter of 1984 compared to an average of 4,124 in first quarter 1983.

Total wages paid to industry employees were reported as much higher than a year ago.

Despite the strong market conditions during most of the first quarter, one mill closed and four others operated on reduced shifts for at least one month.

This report is gathered in cooperation with the Montana Wood Products Association.

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MONTANA LOG PRICE REPORT AVAILABLE

For those interested in Statewide log prices, a bi-monthly log price report will be published in the Forestry Extension Digest Newsletter. The report catalogs recently delivered log prices to sawmills by species using four geographical areas within Montana. The prices are broken down into a reporting range of low, medium and high. The major role of the price report is to show non-industrial-private forest landowners the value of their timber and help them gauge the proper time to enter the market. For information on how to receive the Montana Log Price Report, contact Roy Lynn, Montana State University, Bozeman, Montana 59717.

FOREST INVENTORY REPORT TO BE PUBLISHED

The Montana Department of State Lands, Forestry Division will publish the last in its series of forest inventory reports in July. Like the previously released reports for western Montana, Timber Resources of Eastern Montana will include the usual forest statistics plus sections on silvicultural treatment opportunities and the grazable forest land resource. Copies of the report will be available from: Brian Long, Supervisor, Forest Inventory Section, 2705 Spurgin Road, Missoula, Montana 59801 or (406)728-4300, extension 2323.

RESIDUE UTILIZATION PROJECTS RECEIVE GRANTS

Thirteen innovative Montana energy projects will receive grants under the State's Renewable Energy Conservation Program this year, Leo Berry, Director of the Montana Department of Natural Resources and Conservation, recently announced.

The program is funded through the State's coal severance tax, and the grants are for research, development and demonstration of energy conservation techniques and renewable energy technologies. Two grants were awarded in the area of residue utilization: Rayson Brothers Logging Company of Libby to develop a system for using forest residue to dry vermiculite at the W.R. Grow mine and Glacier Log Homes of Whitefish to build and demonstrate a waste wood-fired kiln to dry logs.

The 13 projects were selected from 35 proposals submitted under the program. Berry said, "We are looking for innovative approaches or designs that provide significant public benefits". Several of the grant will have to be repaid if the projects turn into profit-making ventures.

FOREST NURSERY

This year the State Forest Tree Nursery sold close to 1,070,000 seedlings for reforestation and shelterbelts. The Nursery produces and distributes quality seedling trees and shrubs for non-ornamental, conservation planting in rural areas of Montana. Twenty-four to thirty species are raised with prices that range from $13.00 per 100 for bareroot stock to $44.00 per 100 for containerized greenhouse stock.

Some objectives of the Tree Nursery Program are to encourage landowners to plant wind barriers that will reduce soil erosion, retain moisture, and provide shelter for man, livestock and wildlife. Typical proper uses of tree stock are shelterbelts around homes, buildings, and live stock feeding areas; wildlife planting; field windbreaks; Christmas tree production; critical area planting such as for erosion control; soil stabilization and reclamation planting; and reforestations. Although it is too late to purchase trees for this season's planting, you may want to plan for 1985. To do this, contact your County Extension Agent, Soil Conservation Service (ASCS) or your local State Unit Forester.

EFFICIENCY IN SMALL TIMBER HARVESTING

Today, in a time of deregulation, we see examples of labor and industry looking for ways to reduce costs and increase production to meet the pressure of competition. Similar pressures are being felt in the woods. To keep up, landowners, loggers and timber purchasers will have to look for new ways to increase efficiency rather than defending some traditional methods.

As we ask ourselves how a job could be done differently to reduce costs per unit output, we are often surprised to find that many combinations exist. It becomes evident that each alternative has an associated cost, mean production and a range of operating conditions. After reviewing several alternatives, it becomes apparent that there is no system that will be the least expensive and most productive over the entire range of existing conditions.

If we were to select an area of specialization, we might choose to operate ground based equipment on slopes which are less than 40%, ninety percent of the time. On such slopes a decision would be made as to the size of timber and the type of operation to specialize in. Is it best to specialize in hog fuel, clean chips, posts, poles, sawlogs, or houselogs? Could savings be made by integrating as many operations as possible?

Assuming the decision is to specialize in small timber less than 17" in diameter on slopes less than 4.5% in steepness, and reduce labor costs per unit of output as much as possible, a semi-automated harvesting process mill probably would be decided upon that will reduce labor cost will probably be decided upon. In a stand of 11" timber which averages 110 board feet per tree on slopes varying between 20% and 45%, one could expect a skilled equipment operator who spends two of his ten hours in travel, one hour pulling maintenance and another hour eating lunch, to harvest 2 1/2 trees per minute with a mechanical feller buncher. Working 45 minutes out of each remaining hour, the operator could both fell and bunch 675 trees for a total gross volume of 74,000 board feet, approximately 16 loads per day.

Using the Forest Service's 1983 average allowance of $28 per thousand board measure for felling the equivalent volume would cost $2,070.

Reducing the felling crew from seven sawyers to one operator inside of a protected cab and helper to pick up an occasional oversized tree would substantially reduce the contractor's labor costs as well as his Workers' Compensation Insurance premiums.

In addition, various studies indicate that 38% to 70% of a skidder's time is spent pulling winch line, setting and unhooking an average of 9 chokers per turn in similar size timber. Having trees prebunched with a feller buncher, rather than having to pick up individually manufactured logs, a skidder operator with a grapple could swing the prebunched piles of trees onto the landing without getting out of his seat. For example, on the side mentioned, one of the four tractors and operators that would normally be used to skid that volume could be eliminated by using one large rubber tired skidder with an extendable grapple or a clam-bunk forwarder in conjunction with medium size rubber-tired skidder with grapple and a 79 to 90 horsepower crawler tractor with winch and blade. In addition to winching the hand-felled trees to the skid trails for the swing machines, the tractor could build and cleanup landing as well as winch out equipment that becomes stuck. Not only would this combination of equipment save man and machine hours per day, the time saved climbing on and off the skidder as well as the time savings from pulling winch line through the brush, would collectively increase production and provide a safer operation thus reducing the Workers' Compensation rate.

The logger and purchaser can benefit in another way. Since the breakage due to falling is virtually eliminated, the purchaser can pocket the value of the timber classified as "breakage on Lump Sum sales". As a result of the felling breakage being eliminated, the lumber manufacturer also benefits by getting a higher percentage of 16' lumber which is approximately 10 percent more valuable than shorter lengths which often result from the felling process.

The landowner also benefits. Through use of a feller-buncher, the felling damage to the residual stand is eliminated. Winching damage to the residual stand is also eliminated since the individual trees have been prebunched to lead along the corridor. Cost and environmental impacts can be reduced by forwarding the prebunched material an average of 1300' instead of the current 586'. This could save 4 to 5 miles of road construction and maintenance per section of land. This means less erosion, improved appearance, and perhaps most important, 15 acres of right-of-way clearing per section can be kept in timber production. Lower stump heights, resulting from mechanical felling, accommodates future management as well as speeding up the skidding operation, thereby reducing both track and tire damage.

Another savings can be made in the brush disposal allowance which averages about $14/MBF or $112/acre in Lodgepole pine stands. The difference between what it actually takes to do the job, and the cost estimate of cleaning up a conventional logging operation, can be pocketed as a reward for eliminating the initial mess. Should some logging debris be desirable on the site. Trees can be either partially limbed or dropped on the ground thereby breaking off some tops, limbs and cones.

Centralized landings can be enlarged without additional environmental impact. At the landing, several options become available. For the maximum utilization of small timber (less than 11" DBM), whole trees could be loaded to the truck and cut to length to meet the maximum legal load length. The small trees would then be manufactured to the desired lengths with more efficient equipment at the mill. The hauling, hogging or pelletizing of the non-sawlog material could be paid for from slash deposits. Another option would be to employ a delimber and log processor at the landing. The delimber could either deck logs for a conventional log loader or it could be used to load two lever loaders, a bunk-like device logging truck drivers use to load their own trucks. The advantage of this would be to lower the capital investment of loading. Two new lever loaders cost less than $65,000. They do not require low-boys to transport them, nor do they need an operator to load a truck. No modification needs to be made in the truck. There is no truck delay and it takes less than 10 minutes to load. The slash from the delimber could be piled for later burning with the logger requesting most of the brush disposed withholding for cleaning up the debris. At this point, a logger may wish to go one step further. With a stationary delimber he may wish to park a slash baler next to the delimber so the delimber could pile its debris directly into the baler. The rectangular bales weighing approximately 2000 to 2500 pounds apiece could be removed later for energy fuel with conventional flat bed trucks filled with a self loader. By leaving the bales on the landing for two months, they would lose enough moisture to offset the cost of loading and the fuel required to haul them. This operation could pay for itself, reduce slash disposal costs, manpower, and smoke.

All things considered, I believe some form of highly automated harvesting system has an excellent chance of improving the safety and cost effectiveness of harvesting the smaller, less valuable timber. The greatest challenge is not the technology in harvesting but rather, the development of new markets to utilize the entire timber stand.

Joe Gorsh, Regional Logging Engineer, U.S. Forest Service, Region I, Missoula, Montana.

PROTECTING LOG CABINS FROM DECAY

Many log cabins are built in such a way that decay is almost certain because the builder overlooked simple basic construction practices.

The building must be designed for dryness, protection from rain and ground moisture. Where moisture can accumulate, decay fungi can flourish. Many moisture problems can be elminated with proper roof overhang, roof vents, and concrete or stone foundations. Dry wood does not decay.

Fungal and Insect Damage

Deterioration of wood by decay fungi is the threat to the longevity of a log cabin. There are several classes of fungal damage.

Sapstains cause almost no strength loss in wood but create objectional color changes in wood. However, they also cause increased permeability in the logs, allowing moisture to settle and inviting more decay organisms.

Mold discolorations are usually a surface stain and can be removed by brushing or planing.

On the other hand, soft-rot fungi causes a more severe type of wood degradation. As they grow, they cause a slow surface deterioration which is characterized by breaks across the surface fibers. The transition between the rotted wood and the sound wood beneath is very abrupt.

The most severe types of wood rotters are the typical brown and white rot fungi. They cause rapid decay with great reduction in the strength of the wood and often with little visible outward sign.

Selection of Preservatives

Although many preservatives effectively prevent deecay, some of them may not be suitable due to their color, odor or toxicity. Among the oil preservatives, pentachlorophenol carried in a light petroleum solvent results in the least change in log color. However, pentachlorophenol should never be applied inside the cabin for any reason.

Wood preservatives come in a variety of forms, concentrations and trade names. The chemicals that comprise various preservatives, the solvents that carry them, their colors smells, and toxicity all help to determine the safest, most effective and practical use.

Numerous chemical preservatives are available for applications ranging from preventing discoloration of freshly peeled log to the diffusion process where logs are soaked in solutions under various time schedules.

Another process is the double diffusion process where soaking wood first in one chemical solution and then in a second creates a compound that cannot be leached out of the wood.

The preferred finishes for log cabins are those that are generally referred to as the natural type of finish. These are either the penetrating water-repellent preservatives or the penetrating pigmented stains. For more information on these and other processes, please contact your local State Service Forester or the Department of State Lands, Division of Forestry at 2705 Spurgin Road or phone (406)728-4300.

Reprinted in part from "Protecting Log Cabins From Decay" USDA Forest Service FPL-11 1977.

TRUSS FRAME SYSTEMS TECHNOLOGY GAINING ACCEPTANCE

Madison, Wisconsin--Since January of 1982, when the truss-framed system (TFS) technology was first introduced to the public, nearly 100 U.S. builders have constructed over 1,700 TFS residential homes, apartments and office buildings. According to Erv Schaffer, Forest Service (FS) Wood Construction Specialist working with the TFS, the FS has already met its August 1984 goal of having TFS structures in 30 states.

"We reached our goal earlier this year when a TFS home was built in Lacy, Washington," says Schaffer. "Since then, several other TFS structures have been built and we are well over our 30 state goal."

Developed only five years ago, the truss-framed system has become big news in the light-frame construction industry. The system was developed by engineers at the Forest Products Laboratory (FPL) and incorporates an open-webbed floor truss, an open-webbed roof truss, and conventional wall studs into a unitized frame. The frames are placed on a foundation on 24-inch centers and covered with structural sheathing. Because of the frames, the system is stronger than most conventional systems although it requires about 30 percent less structural framing lumber. Also, construction time is less--a typical 1,500 square foot home can be ercted in less than a day.

In 1978, FPL built the first TFS house on the University of Wisconsin Experimental Farm near Arlington, Wisconsin. Following that, a major technology transfer effort got underway to spread the word and get TFS houses on the market. Schaffer estimates that this information program has exposedd about 2 1/2 million people to the system.

A second goal of the technology transfer program was to achieve government regulatory agency acceptance of the TFS. This was accomplished in 1982 through the Department of Housing and Urban Development (HUD).

The first "modular" TFS structrure, a 30 person, 5,000 square foot barracks, is now under construction in Tualatin, Oregon, for location in Ketchikan, Alaska.

The Forest Products Laboratory is maintained in Madison, Wisconsin, by the Forest Service, U.S. Department of Agriculture, in cooperation with the University of Wisconsin.

GETTING MORE CORRECTLY BUCKED LOGS FROM THE WOODS

Loggers, landowners, and sawmill managers alike recognize the importance of getting correctly bucked logs from the woods. Correctly bucked logs means more usable and higher quality wood for the sawmill manager, more take home pay to the logger and less waste, and a higher return to the landowner.

As in sawmilling the first cut determines the potential lumber volume that can be recovered from a log or tree. When a high stump is left, some of the best quality wood in the tree is lost. Often the upper log will be shorter than necessary because there is just not enough length in the remaining stem to get the next 2 feet of length. This could, for example, make the difference between getting a 16 foot log or having to take a 14 foot log.

Once felled, the volume recovered is dependent on the procedures and accuracy used by the bucking crew.
Incorrect log lengths, diagonal cuts, and misbucks due to sweep and crook rob volume and profits.

Misbucking the log because of sweep, crook, or defect can make it virtually worthless. But by cutting it to minimize these effects both scale and grade can be improved.

The Montana Division of Forestry can help you determine how much usable wood you are actually getting from the woods and more importantly, how much volume you are losing.

This service includes an on the ground visit to collect data and a computer analysis of the information collected. This service is part of the Division's Improved Harvesting Program (a cooperative venture between the Division and U.S. Forest Service) and is provided as an aid to the sawmiller, logger, and landowner to recover more volume (and profits) from each tree. You can find out more about this service by contacting one of the following Division of Forestry offices.

Office	Mailing Address	Zip	Location	Phone
Anaconda	7916 Highway 10-A West	59711	7 miles W. of Anaconda	563-6078
Billings	Box 20692, Pioneer Station	59102	1245 N. 29th, Room 207	259-3264
Bozeman	Box 1343	59715	25 E. Mendenhallk	586-5243
Hamilton	Box 713	59840	Ford Building	363-1585
Helena	8001 N. Montana Avenue	59601	Same	444-3633
Kalispell	Box 490	59901	2250 Highway 93 North	755-6575
Lewistown	Box 1021	59457	513 West Janeaux	538-5989
Missoula	2705 Spurgin Road	59801	Same	728-4300
Plains	Box 219	59859	1 mile W. of Plains	826-2791
Clearwater State Forest	Greenough, Montana	59836	2 miles E. Clearwater Jct.	793-5757
Stillwater State Forest	Box 164, Olney, Montana	59927	Olney	881-2371
Eastern Land Office	P.O. Box 1794	59303	Miles City	232-2034

TIMBER SALES

Currently the Division of Forestry has some timber sales open for public bidding. Full particulars regarding the terms of the contracts, regulations governing the sales, and bid information may be obtained from the Department of State Lands, Division of Forestry, 2705 Spurgin Road, Missoula, Montana 59801.

RADNOR-DOG MOUNTAIN TIMBER SALE: Sealed bids will be received by the Department of State Lands, Division of Forestry in Missoula up to 2:00 p.m., June 25, 1984 for the merchantable sawtimber designated for cutting on Lots 1 and 2, E1/2NW1/4, NE1/4SW1/4 Section 30, T33N-R23W; S1/2S1/2 Section 13, Lots 1, 6 and 11, NE1/4SE1/4 Section 23, Lots 1 through 7, inclusive, NE1/4NEW1/4, SW1/4 Section 24 all in T33N-R24W estimated to contain 29 MBF whit pine, 201 MBF larch, 18 MBF Douglasfir, 94 MBF spruce, 612 MBF lodgepole pine, 103 MBF cedar, 32 MBF alpine fir, 42 MBF grand fir, 2 MBF hemlock, 30 MBF recent dry for a total of 1,163 MBF, more or less.

DAVIS POINT TIMBER SALE: Sealed bids will be received by the Department of State Lands, Division of Forestry in Missoula up to 3:00 p.m., June 26, 1984 for the merchantable sawtimber designated for cutting in Section 14, T11N-R19W estimated to contain 49 MBF ponderosa pine, 24 MBF western larch, 482 MBF Douglasfir, 10 MBF spruce, 180 MBF lodgepole pine, 70 MBF white fir, and 1 MBF dry sawlogs, more or less, for a total of 815 MBF.

REDEMPTION HILL TIMBER SALE: Sealed bids will be received by the Department of State Lands, Division of Forestry in Missoula up to 3:00 p.m., June 25, 1984 for the merchantable sawtimber designated for cutting in Section 6, T29N-R27W, in the S1/2, NE1/4 and SW1/NW1/4 of Section 8, T29N-R27W and in the NE1/4, E1/2NW1/4 and the NW1/4SE1/4 of Section 12, T29N-R28W estimated to contain 2,223 MBF ponderosa pine, 346 MBF western larch, 300 MBF Douglasfir, 1 MBF spruce, 503 MBF green and dry lodgepole pine, 7 MBF white fir, 10 MBF dry all other species for a total of 3,390 MBF, more or less.

LITTLE THOMPSON TIMBER SALE: Sealed bids will be received by the Department of State Lands, Division of Forestry in Missoula up to 2:00 p.m., June 26, 1984 for the merchantable sawtimber designated for cutting in Section 8, T22N-R26W estimated to contain 505 MBF ponderosa pine, 4 MBF western larch, 57 MBF Douglasfir, 645 MBF lodgepole pine and 4 MBF dry all species, more or less, for a total estimated volume of 1,215 MBF.

NEW PUBLICATIONS

The following publications are available free of charge by writing the Publications Dept., Forest Products Laboratory, North Walnut St., P.O. Box 5130, Madison, WI 53705.

Characterization of Physical and Mechanical Properties of 2 by 4 Truss Lumber This report, along with a previous report, provides strength data for engineering evaluation of wood truss reliability. It summarizes data on dimensional characteristics, optimum grade, and regressions of strength on modulus of elasticity and grade of lumber specimens sampled from truss fabricators in Illinois. To obtain copy of this program, request General Technical Report FPL-431.

Performance of Low-Rise Timber Buildings Subjected to Seismic, Wind, and Snow Loads The author discusses the observed performance of timber structures subjected to natural disasters and suggests how this performance might be improved. To obtain copy of this program, request Preprint 83-015. New York: American Society of Civil Engineers; 1983.

Outdoor Wood Finishes. Varnish is Pretty, but Paint's Tougher The author discusses the use of paint and varnishes, water repellent preservatives, and pigmented or semitransparent stains to protect wood which must be left outdoors. Also discussed are the processses used prior to painting or staining. To obtain copy of this program, request Fine Woodworking. September/October 1983: 66-67.

Field Trials with Ammoniacal Copper Borate Wood Preservative This paper reports on field trials using ammoniacal copper borate (ACB) for wood preservation. The tests were conducted under varied conditions and in different environments. At the highest retention, panels were unattacked. ACB is not as suitable for wood protection as ammoniacal copper arsenate where the degradation hazard is high. To obtain a copy of this program, request Forest Prod. J. 33(9):59-63: 1983.

INITIAL USE OF PRESS-DRIED PAPERBOARD IN CORRUGATED FIBERBOARD CONTAINERS Press drying is a new technique developed for drying paper and paperboard webs with simultaneous heat and pressure. In this study the author combined the limited quantities of press-dried linerboards and corrugating mediums, from unrefined oak kraft pulp, remaining from a previous study and evaluated the corrugated fiberboard and boxes made with these components. To obtain a copy of this program, request Tappi J. 66(10): 92-95: 1983.

FOR SALE: SERVICES & EQUIPMENT

Timber Sale Contractor, Forest Consultant, sawmill products, timber cruising, house logs, sawlogs, log scaling, poles. Contact Steve Higgins, FORESTER, LOG LOCATOR, 205 Colorado Avenue, Whitefish, Montana 59937 or phone (406) 862-6375.

Stationary circle sawmill, hydrolic dogs, hydrolic log turner, live log deck, vertical Arbor edger, mill currently not operating. Willing to trade for items of equal value. Contact Gary Murphy (406) 728-5131, RFD #2, Browns Gulch, Butte, Montana 59701.

Gishold #2 Turret lathe 16" swing, 36" between centers, bar feeder and other miscellaneous machine parts, also heavy duty Buffalo brand drill press, 24" feed. Phone (406) 273-0502 evenings.

1951 model R diesel farm tractor. Very good condition. Phone (406) 273-0502.

48" Michigan knife grinder $8,495.00.
2-56" 3 1/2 pattern 6/7 gauge headwas ready to install.
2-30" cut-off saws solid tooth 1 1/8" Arbor $150.00.
Now selling Thorsen pro-line of tools, good prices. Contact Bob at Missoula Saws, Inc., 2301 Grant Street, Missoula, Montana 59801 or phone 721-2580. Outside Montana call toll free 1-800-548-2484.

Nicholson utilizer portable barker-chipper model 18 for logs to 18" diameter, cat diesel engine. Blower discharge from v drum chipper for trailer loading. Salem 66" linebar resaw, right hand, with Salem air setworks. Contact Hybertson Machinery, 1867 Chelan Street NE, Salem, Oregon 97310 or phone (503) 393-4433.

Allen-Bradley 646 manual autotransformer type starter, size D 100 hp., 220 volt; G.E. 40 hp. 1775 rpm. 220/440 rpm. volt motor; Lincoln 50 hp. 1745 rpm. 220/440 rpm. volt motor; Hosmer model SB-18 Rosser head debarker; Buss 36" single surface planer 3 knife round head, 20 hp. DMD; Tenko double end profiler; 3 trim saws for cutting squares to length, 5 hp. arbor motors; Wadkins AGC 4 x 7, 5 head moulder; Porter SLA 42 cut-off saw; Ross 6000# forklift truck; kupfermuhle 4 sided planer, 24" top and bottom heads; Festo DSS4 with 4, 9000 rpm. cutterheads and 2 feed units; 24" bandsaw, 1 1/2 hp. single phase; Nash 6 spindle turning sander for parts; Beach #3 cut-off saw, 80" length capacity x 24" carriage travel; Whitney 50" back knife lathe; Madison 30" turning lathe; Schramm "105" 30 hp. air compressor; Eurosaw 22" x 14" bandsaw.

Horselogging - A Specialty Selective Cut Service - very clean - no job to small, for more information contact: Erin Horselogging, George Sullivan, Box 2608, Route 1, Arlee, Montana 59821.

WANTED

Green Lodgepole pine suitable for utility power poles: 10.5" dbh and larger; delivered or stumpage; contact Idaho Pole Co., Box 1129, Bozeman, Montana 59715 or phone (406) 587-5181.

Oak Car Decking: 3" x 6" or 8" - 12' dry or green. Orders to place. Contact W. Preston Gremain, Germain Timber Co., P.O. Box 7836, phone (412) 782-3240.

4/4 2C & Btr Ash AD or Green - need 4/4 2C & Btr White Oak or Red Oak. Only nice quality lumber wanted against firm orders. Contact W. Preston Gremain, Germain Timber Co., P.O. Box 7836, Pittsburgh, PA 15215, (412) 782-3240.

An honest and reliable person to grade, purchase cross ties, and to load cars. This is year around business. Prefer sawmill with present yard and equipment. Phone COLLECT to W. Preston Germain, Germain Timber Co., P.O. Box 7836, Pittsburgh, PA 15215, phone (412) 782-3240.

If you wish to advertise a forest product or a piece of wood-processing machinery in this bulletin complete the form below. No charge is made for this service. If you wish to rerun an item, a written request must be submitted before the next issue.

NAME OF PERSON OR FIRM: _____

MAILING ADDRESS: _____

ZIP CODE: _____ PHONE: _____

Type or print your advertisement in the space below, detach and return to:

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